

Effect of Structured Teaching Programme on Knowledge, Anxiety and Behavioural Response of Patients Undergoing Endoscopy at a Tertiary Care Hospital

Maj (Mrs) Smitha Thomas

Abstract

Upper gastrointestinal endoscopy is a common OPD procedure carried out for diagnostic as well as therapeutic purpose. Limited time for interaction between patients and health workers leads to increased anxiety among patients. This study was carried among 50 patients undergoing planned, diagnostic upper GI endoscopy for the first time at a tertiary care hospital. A pre-experimental study was conducted using single group pre-test post-test design. On the day of appointment, their socio-demographic data, baseline knowledge and anxiety levels were assessed using the structured questionnaire and the State and Trait Anxiety Inventory. The patients were then imparted structured teaching programme on the various aspects of upper GI endoscopy using video, flash cards and flip charts and a pamphlet for later reference. On the day of the procedure, their knowledge and anxiety levels were reassessed using the same tool. The patients were provided another session of structured teaching programme using the same AV aids. The behavioural responses of the patients were then observed during the procedure using an observation checklist. Statistical analysis revealed that the knowledge score of the patients increased significantly following the structured teaching ($p < 0.0001$). The mean pre-test anxiety score decreased significantly following the intervention ($p < 0.0001$), only 4 percent had extreme responses like grabbing the endoscope and not maintaining the position.

Endoscopy is a seemingly simple procedure but a cause of stress for the patients. Preventing extreme anxiety during the examination is important as it may result in a wide range of potential complications and even the cancellation of examination (Feyzullah et al, 2010).

In the era of Internet, all the relevant information regarding any medical condition is available on the net. The authenticity of this information cannot be ascertained and so patients feel more confident when this information is imparted to them by health care personnel, who, by virtue of their experience can communicate to the patients what exactly happens during the procedure and how the patient has to co-operate during the procedure.

There is an overall increase in the number of endoscopies being performed due to increase in the incidence of peptic ulcer, gastro esophageal reflux disease (GERD), H. pylori-related ulcers and chronic

infectious diseases like hepatitis B and hepatitis C virus infection. It is also included in the screening protocol for various other diseases.

An estimated 20 million-plus endoscopies are performed yearly in the United States. Out of this, 30.6 percent endoscopies are upper GI endoscopy. India lacks a centralised data base of these procedures; however, in the hospital under study, an average of 3500 endoscopies are carried out yearly. Upper GI endoscopy constitutes about 75 percent of these procedures.

Usually considered a relatively safe procedure, endoscopy is also associated with certain complications. According to the American Society for Gastrointestinal Endoscopy, the overall complication rate of endoscopy was 0.13 percent with an associated mortality of 0.004 percent.

Cardio respiratory depression is the most serious adverse effect accounting for approximately half of the morbidity and mortality related to diagnostic endoscopic procedures (Loughlin & Shaker, 2009).

The author is Tutor at College of Nursing, Armed Forces Medical College, Pune.

Review of Literature

Reducing the anxiety before an upper gastrointestinal endoscopy may assist in promoting relaxation, enhancing better co-operation and thereby preventing possible complications during the procedure. A study by Keilty (2008), among 137 patients undergoing gastrotomy in Ireland revealed that patients were provided with most of the procedural information but very less sensory information.

Jones et al (2004) found in a study among 94 patients that diagnostic endoscopy is associated with modest increase in anxiety irrespective of age, sex, procedure and indication. The investigators emphasised that providing information and relaxation intervention reduced heart rate and distress during insertion of endoscope. Throughout literature, patients' education is perceived as an essential element of nurse's role.

In a study among children older than five years undergoing gastrointestinal endoscopy and their parents Riddhiputra & Ukarapol (2006) found that the systematic psychological preparation resulted in statistically significant reduction of anxiety among parents ($p=0.143$) as well as the children ($p<0.001$). Similar study conducted by Abuksis et al (2001) among 142 patients undergoing endoscopic procedures showed that the patients in the targeted educational session group had low levels of anxiety, lesser cancellations, better compliance and decreased need for repeated examinations. Gowri N in a study (2010) among 50 subjects attending a rural health centre at Pitchavaram in Tamilnadu found that there was a significant increase in the knowledge level and attitude of patients following the structured teaching programme.

In another study by Trevisani et al (2002) among 163 patients undergoing endoscopy (75 gastroscopy, 51 colonoscopy and 37 bronchoscopy) to evaluate the relationship of anxiety with various procedures, it was concluded that anxiety levels were not related to the type of endoscopic procedure. They also observed that there was a direct relationship between state and trait anxiety ($p<0.001$). Patients cooperation was inversely related to both state ($p<0.01$) and trait ($p<0.05$) anxiety.

Objectives

The objectives of the study were to:

1. Determine the knowledge of the patients undergoing endoscopy before and after the structured teaching programme.
2. Evaluate anxiety of the patients before and after

administering structured teaching programme.

3. Observe the behavioural response of the patients during endoscopy.

Hypothesis: H_{0a} - There is no significant difference in the knowledge level of the patients undergoing endoscopy before and after the structured teaching programme at 0.05 level of significance.

H_{0b} - There is no significant difference in the anxiety level of the patients undergoing endoscopy before and after the structured teaching programme at 0.05 level of significance.

Methodology

This study adopted a pre-experimental one group pre-test post-test design (Table 1).

Independent variable was the structured teaching on upper gastrointestinal endoscopy and the dependent variables were knowledge level, anxiety level and behavioural responses. The setting of the study was a Gastroenterology centre at a tertiary care hospital and the patients undergoing planned diagnostic upper GI endoscopy for the first time, constituted the target population. Purposive sampling was used with sample size of 50 patients.

$$n = \frac{(Z_{1-\alpha/2})^2 \sigma^2}{d^2}$$

Where, σ = the standard deviation of the response after the intervention.

d = acceptable deviation

$Z_{1-\alpha/2}$ = value of two tailed alpha (type-I) i.e.; 1.96 at 5% level of significance

Considering the factors of attrition, 50 samples were included in the study.

Inclusion criteria: Patients attending Gastroenterology OPD of a tertiary care hospital, both male and female patients above 18 years of age; who could read and write Hindi, English or Marathi; who were willing to participate in the study; undergoing the planned diagnostic upper gastrointestinal endoscopy for the first time were included.

Exclusion criteria: Patients in the hospital; undergoing emergency endoscopy; and those who were cognitively impaired were excluded.

Description of the tools

Structured questionnaire for socio demographic data: This included six items that were intended to collect information about age, sex, education, marital

Table 1: Research design

Variable	Day1	Day of endoscopy
Knowledge	O ₁ X ₁	O ₂ X ₁
Anxiety	O ₃ X ₁	O ₄ X ₁
Behavioural response	-----	During the procedure

O - test, X - intervention

Interpretation	Score	Percentage
Poor	0-3	<30%
Average	4-7	40-70%
Good	8-10	80-100%

status, dietary habits and family structure.

Structured questionnaire on knowledge regarding upper GI endoscopy: The questionnaire included ten closed-ended questions. The maximum score on knowledge was 10. The knowledge score was interpreted as poor, average or good.

Observation checklist for behavioural responses: An observation checklist was prepared to record the presence or absence of various behavioural responses of the patients during procedure. It was based on the behavioural signs of distress form propagated by Maguire D, experts' opinion and the observations of the investigator.

State and Trait Anxiety Inventory (STAI): Anxiety level in patients assessed using the standardised tool.

The reliability was calculated using split half

Table 2: Distribution of patients according to age, sex and educational qualification (n=50)

Characteristics	Category	Frequency (f)	Percentage (%)
Age (yrs)	21-30	9	18
	31-40	15	30
	41-50	10	20
	51-60	4	8
	61-70	12	24
Sex	Male	34	68
	Female	16	32
Education	Primary	10	20
	Secondary	14	28
	Higher secondary	16	32
	Diploma	5	10
	Graduate & above	5	10

method and test-retest method. The correlation coefficient was found to be 0.8 and 0.993399, suggesting the reliability of the tool. Validity was established by the experts in the field of Nursing and Gastroenterology. Inter-rater reliability was assessed for checking the consistency of the observation checklist. The computed value of Cohens Cappa was 0.9814 which was highly significant.

Results

The socio-demographic characteristics are given in Table 2. Most of the patients (n=15, 30%) belonged to the age group 31-40 years and 4 (8%) to the age group 51-60 years. The mean age of the population was 45.05 ± 15.29 years. Knowledge score of the patients and their anxiety levels are outlined in Tables 3 & 4.

In the study, the hypothesis adopted were:

As there was no significant difference in the knowledge level of the patients undergoing endoscopy before and after the structured teaching programme at 0.05 level of significance, the null hypothesis H_{0a} was rejected at 0.05 level of significance.

Since there was no significant difference in the anxiety level of the patients undergoing endoscopy before and after the structured teaching programme at 0.05 level of significance, the null hypothesis H_{0b} was rejected at 0.05 level of significance.

Discussion

In the study population, majority of the patients (n=15, 30%) belonged to the age group of 31-40 years and were predominantly males 34 (68%). However, the data provided by the National endoscopic data base revealed that majority of the patients undergoing upper GI endoscopy belonged to the age group 50-59 years. This shift can be attributed to various causes. The study was carried out amongst a population which has a stressful life style. Most of them have a very rigorous life style and have long periods of stay separated from their family due to the job constraints. At present, people have been found to consume junk foods and increased amount of alcohol. These factors could have attributed to the findings of the present study where a large number of young people were found to be affected with gastroenterology problems.

Knowledge of the patients undergoing endoscopy

The post-test knowledge scores of the patient were significantly increased with 36 patients (72%) scoring good, 14 (28%) patients scoring average. No one scored poor. The computed value of Wilcoxon 'Z'

Table 3: Mean knowledge score of patients undergoing endoscopy (n=50)

Mean Pre-test knowledge score	Mean Post-test knowledge score	Wilcoxon 'Z' Value	p value
3.62 ± 1.95	8.2 ± 1.21	6.19	<0.0001

Table 4: Mean anxiety level of the patients undergoing endoscopy (n=50)

Mean Pre-test anxiety score	Mean Post-test anxiety score	Wilcoxon 'Z' Value	p value
44.30 ± 3.96	41.40 ± 4.48	3.67	<0.0001

was 6.19 which was statistically significant at a value of $p < 0.0001$, suggesting the effectiveness of structured teaching programme.

The knowledge score of the patients improves significantly following the structured teaching. This may be attributed to the educational status of the study population. Out of 50 patients, 16 (32%) were educated till higher secondary school. Only 10 (20%) were educated till primary school.

The finding of this study was similar to those by Dhital et al (2005) among 200 adolescents in Nepal to assess the effect of structured teaching programme on knowledge and attitude of school going adolescent children towards reproductive health. Statistical analysis showed a significant increase in the knowledge and attitude of children after the structured teaching programme ($p < 0.001$).

Analysis of the association of sociodemographic variables and knowledge score of the patients re-

vealed a significant association between the knowledge score and educational qualification of patients. Analysis of variance values obtained were 3.50 and 5.82 in the pre- and post-test knowledge score which was statistically significant at $p < 0.05$ and $p < 0.005$ in the pre and post-test knowledge score respectively. However, the other socio-demographic variables did not have any significant association with the knowledge score of the patients.

Anxiety level of patients undergoing upper GI endoscopy

In the pre-test, 46 (92%) patients exhibited moderate anxiety, 3 (6%) exhibited severe anxiety and 1 (2%) exhibited mild anxiety. In the post-test, the percentage of patients exhibiting moderate and severe anxiety had reduced. Majority, i.e. 47 (94%) of the patients exhibited moderate anxiety with only 2 (4%) exhibiting severe anxiety.

Anxiety is a state of mind influenced by various factors. It has both a state and trait component. However, in the present study, there was a reduction in the anxiety level after structured teaching programme. The above findings were supported by another study by Jjala HA, et al (2010), which revealed that most of the patients in the experimental group experienced low anxiety. On comparing both the studies, it was found that majority of the patients in the present study exhibited moderate anxiety. This may be due to the fact that in the study setting, the upper GI endoscopy was carried out without any sedation.

In the present study, it was found that anxiety was not significantly associated with demographic variables like age, sex, educational qualification or marital status.

Behavioural responses of the patients

Common responses seen during upper GI endoscopy are gagging, retching and body movements, gagging being the most common. In the present study, two patients grabbed the endoscope during the process of insertion. One patient even pulled out the probe after the insertion of scope into the mouth leading to the abandonment of the procedure.

Conclusion

The study revealed that the patients lacked adequate knowledge regarding the procedure; they were extremely anxious before the procedure which can result in complications during the pro-

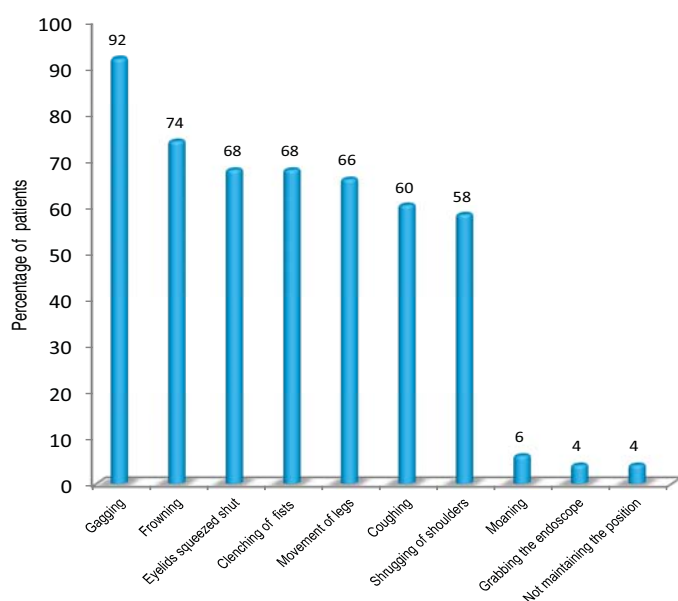


Fig 2: Behavioural response of the patient

cedure. Though anxiety is a trait, it can be modified through various interventions. This results in patient satisfaction and better outcome of the procedure. Nurses play a pivotal role in providing education and being supportive during the procedure. Structured teaching programme is an effective strategy in improving the knowledge level of the patients undergoing endoscopy. There is an urgent need to educate patients regarding the procedure at the time of appointment using appropriate audiovisual aids.

References

1. Keilty LA. An investigation into the information received by patients undergoing gastroscopy in a large teaching hospital in Ireland. *Gastroenterol Nurs* 2008; 31(3): 212
2. Feyzullah E, Toros AB, Aydo G, Bektafi H, Ozcani O, Arkan S. Assessment of anxiety levels in patients during elective upper gastrointestinal endoscopy and colonoscopy. *Turk J Gastroenterol* 2010 Feb; 21(1): 29-33
3. Ruhl E, Everhart JE. Indications and outcomes of gastrointestinal endoscopy. Available from: http://www3.niddk.nih.gov/Burdenof_Digestive_Diseases/index.
4. Loughlin CO, Shaker R. Complications of upper gastrointestinal endoscopy. Tham CK, Collins JSA, Soetkino RM. In: *Gastrointestinal emergencies*. 2nd edn, UK: Wiley Blackwell Publishing; 2009; pp 43-47
5. Jones MP, Ebert CC, Sloan T, et al. Patient anxiety and elective gastrointestinal endoscopy. *J Clin Gastroenterol* 2004; 38(1): 35-40
6. Riddhiputra P, Ukarapol N. Effect of systematic psychological preparation using visual illustration prior to gastrointestinal endoscopy on the anxiety of both Paediatric patients and parents. *J Med Assoc Thai* 2006; 89(2): 231-35 (Available from URL: <http://pubget.com/paper/16579011>)
7. Trevisani L, Sartori S, Putinati S, et al. Assessment of anxiety levels in patients during diagnostic endoscopy. *Recenti Prog Med* 2002; 93(4): 240-44
8. Abuksis G, Mor M, Segal N, et al. A patient education program is cost-effective for preventing failure of endoscopic procedures in a gastroenterology department. *The Am J Gastroenterol* 2001; 96: 1786-90
9. Dhital AD, Badhu BP, Paudel RK, Uprety DK. Effectiveness of structured teaching program in improving the knowledge and attitude of school going adolescents on reproductive health. *Kathmandu Univ Med J* 2005 Oct-Dec; 3(4): 380-83
10. Gowri N. Effective structured teaching programme on knowledge, attitude and practices regarding tobacco consumption in rural health setting. *Nursing Journal of India* 2010 Feb; 2: 21-3
11. Jilala HA, French JL, Foxall GC, Hardman JG, Bedford MN. Effect of preoperative multimedia information on perioperative anxiety in patients undergoing procedures under regional anesthesia. *Br J Anaesth* 2010; 104(3): 369-74

World First Aid Day: 12 September

Millions of people are killed or hurt by injuries every year just because response was not adequate or timely assistance was not available. In most cases, immediate action by applying appropriate techniques could have brought significant improvement or increased the chances of survival. As an initiative of the International Federation of Red Cross and Red Crescent Societies (IFRC) World First Aid Day is celebrated on second Saturday of September each year (this year on 12 September) to raise awareness on how first aid prevents injuries and save lives in routine and crisis situations. One providing First aid is normally a non-expert and the technique consists of a series of simple and in some cases, potentially life-saving techniques. Any individual can be trained to perform it with minimal equipment. World over, more than 100 Red Cross and Red Crescent Societies organise events and ceremonies on this day to raise public awareness of first aid.



World Heart Day: 29 September

Globally, cardiovascular diseases (CVDs) stand atop as cause of death says WHO. Between 1990 and 2013, the world witnessed rise in number of deaths due to CVDs from 12.3 million to 17.3 million i.e. by a whopping 41 percent. The risk factors attributed to heart disease and stroke include: hypertension i.e. raised blood pressure, cholesterol and glucose levels; smoking; obesity; and inadequate intake of fruits and vegetables.

World Heart Day on 29 September each year is a World Heart Federation (WHF) initiative to wake up nations and health functionaries to the imperative of helping curb the incidence of heart diseases. WHF believes that not less than 80 percent of premature deaths from CVDs could be avoided if four main risk factors viz. unhealthy diet, tobacco use, physical inactivity and harmful use of alcohol are in control.

There has been considerable increase in the incidence of heart disease in the past 20 years with India's economic growth and urbanisation. In India annually some 2.4 million Indians die due to heart disease. Making the heart toll so regrettable is the fact that more than half the persons with heart attack die just because they unable to reach the health facility in time or they are not given cardiopulmonary resuscitation (CPR) which is 5-minute simple procedure that anyone can perform anywhere.

RD Memorial College of Nursing

Barkhedi Kalan, Bhadbhada Road, Bhopal - 462044 (MP)
ISO Certified - No. QM/1503RD/1057, 9001:2008(QMS)
Recognised by Indian Nursing Council, New Delhi
MP State Govt and affiliated to Barkatullah University, Bhopal (MP)
Email: rdmcnursing@gmail.com
Ph: 0755-2696635, 9303133077, 9406947768

ADMISSION GUIDANCE

MSc Nursing - MSN, CHN, OBG, PSY & Pediatric Nursing
M/F with Post Basic BSc / BSc Nursing with minimum 1 year experience

BSc Nursing - M/F with 10+2 (PCBE) 45%, SC / ST 40%.
Age not less than 17 years

PB BSc Nursing - M/F with GNM pass. No experience

GNM - M/F with 10+2 pass 40% (any subject)

ANM - Only female with 10+2 pass (any subject)

Application form Rs. 350/- by post, Rs. 400/- by DD in favour of RD Memorial College of Nursing, Bhopal (Govt. candidate to apply through proper channel)

REQUIRED

Professor / Associate Professor / Assistant Professor / Tutor (All Specialities)
Qualification and experience - as per Indian Nursing Council norms. Salary - as per UGC norms.

Brig (Retd) Esther Daulat
Principal